2.3 VALUE ENGINEERING STUDY

2.3.1 Study Background

Passage of the National Highway Systems (NHS) Act of 1995 included a value engineering (VE) mandate directing the U.S. Secretary of Transportation to develop a program requiring State Departments of Transportation to carry out a VE analysis for design projects on the NHS that cost $25 million or more. In recent years, VE studies have been conducted for planning studies in addition to major design projects because of the potential to help minimize project impacts and for future cost savings. The US 8 EIS VE study was conducted by WisDOT from November 3 to November 7, 2003, in Rice Lake, Wisconsin. The study's objectives were to review the project alternatives and bypass options along the corridor and to suggest cost savings, modify alternatives, and identify potential new alternatives.

2.3.2 Summary of Value Engineering Proposals

The VE team was assembled to evaluate the preliminary engineering designs of the proposed alternatives for the US 8 project and to provide value-added recommendations. The project was presented to the study team at the beginning of the VE study. After reviewing project information and preliminary designs, the study team developed Value Proposals that offered potential cost savings or recommended value-added options. Forty-nine ideas were developed in the initial stages of the study. Of the original 49 ideas, 34 proposals were carried forward for evaluation and were ranked based on applicability and potential for implementation. The team also discussed project phasing and critical needs for the corridor including corridor preservation.

The 34 proposals carried forward are listed in Table 2.3.2-1. The proposals retain their original numbering from the report on the findings of the VE Study[1]. The EIS Team Response in the table column describes how the proposals were classified or addressed.

Table 2.3.2-1

VE Study Proposals

Proposal Number	VE Proposal Description	EIS Team Response
1.	Eliminate Through-town Barron Alternative (Do not use an alternative that goes through town)	Alternative to be carried through EIS process
8.	Consider WIS 25 (N)/US 8 connector as a roundabout for northern bypass	Future design decision
9.	Consider near north along 14 ½ Avenue. Start east of County T (Near north Barron bypass)	Proposal creates new environmental and relocation impacts
12.	Recommend Poskin Bypass Alternative	Considered Further
13.	Address trail crossing in Turtle Lake vicinity	Included in EIS
14.	For Through-town Turtle Lake Alternative, improve tribal complex access (US 8 Access)	Future design decision
15.	Provide bus circulations loop for through-town	Future design decision
16.	Add signalized intersections to through-town (Turtle Lake) alternatives	Future design decision
18.	Add service road for County T to Tribal Enterprise (Turtle Lake)	Future design decision
19.	Route US 63 (N) on County T and east on Beaverbrook (Turtle Lake)	Outside scope of study
20.	Delete Turtle Lake north bypass alternative	Alternative to be carried through EIS process
21.	Turtle Lake South Bypass, move US 63 (S) to the west for single interchange	Considered Further
22.	Move US 63 (S) to County K/County KK south of site (Turtle Lake)	Outside scope of study
24.	Turtle Lake South Bypass, make US 8 a grade separation vs. intersection	Included in EIS
26.	Leave US 63 through town for US 8 Bypass Alternatives	Considered Further
30.	At Deer Lake, connect WIS 35 N and County Y (relocate County Y)	WisDOT and County decision to not pursue this proposal
31.	At Deer Lake, use roundabout for WIS 35 North (instead of interchange)	Future design decision

[1] Edwards and Kelcey, *USH 8 Value Engineering Study Findings for WisDOT District 8,* December 8, 2003

Proposal Number	VE Proposal Description	EIS Team Response
33.	Consider north alignment adjustment along Deer Lake and bow at east end (with 84.25 control now, invoke freeway/express)	Proposal alignment moves road closer to Deer Lake
34.	Move Deer Lake Southern Realignment further south to back property lines with 170th grade-separated crossing (access to existing area would be on both ends of "Deer Lake")	Considered Further
36.	Do not consider Through-town alternative for Range. Consider improving Northern Realignment.	Alternative to be carried through EIS process
37.	In Range Northern Realignment, shift northward east of County D to miss ponds	Additional relocations impacts
37A.	Modify Range Southern Realignment to miss wetland	Future design decision
38.	Reroute 125th Avenue to 15th Street south of 115th Street	Considered Further
39.	Improve sections across Joel Flowage, Clover Lake, and Twin Lakes	Considered Further
40.	Remove causeway sections across Joel Flowage, Clover Lake, and Twin Lakes	Future design decision
41.	On No-build Alternative, continue Turtle Lake and Barron needs with corridor preservation	Considered Further
42.	Recommend access control for corridor except Turtle Lake and Barron	Included in EIS
43.	At Turtle Lake, develop access management plan with village	WisDOT Decision
44.	At Barron, make decision and map corridor	WisDOT Decision
45.	Consider utilizing more of recently built projects east and west of Turtle Lake into the new corridor design	Considered Further
46.	Eliminate the Barron North Bypass grade separation at the rail crossing at the east end of the segment	Considered Further
47.	At west end of the corridor, extend the transitional road section from intersection at WIS 35 (N) to WIS 65 (N)	Future design decision
48.	Extend the transitional road section in Turtle Lake from US 63 (N) to Poplar Street	Future design decision
49.	Determine structure sections based on required hydraulic analysis and existing statutory requirements at time of permit.	Future design decision

2.3.3 Value Engineering Proposals Considered Further

The 34 proposals were reviewed by the US 8 EIS project team and evaluated for feasibility and potential for implementation. Twenty-four of the 34 proposals are design considerations that may be considered during future design phases, some were already being considered, and others either did not address design criteria for US 8 corridor or were outside the scope of the study. The remaining nine proposals were addressed by the study team following the VE study. The nine proposals considered further are:

Proposal 12. Recommend Poskin bypass alternative.

WisDOT's recommended alternative is the Poskin Southern Realignment. This discussion is included in Section 2.7.6. However, both Poskin alternatives will be presented in this document and considered for comment.

Proposal 21. Turtle Lake South Bypass, move US 63 (S) to the west for single interchange.

At the time of the VE Study, interchanges were not planned for either end of the bypass routes since WisDOT's preference included having at-grade intersections at the ends of the bypass with one interchange located at US 63. This has since been revised. For the current south bypass alternatives, a west interchange is proposed at US 63 (S) and access to US 8 where it rejoins existing alignment to the west (at approximately 15th Street) will not be permitted.

Proposal 26. Leave US 63 traffic through town for US 8 South Bypass alternatives.

US 8 traffic that is bound for US 63 would exit at either the proposed US 63 (S) interchange or the proposed interchange at County KK. US 63 traffic would remain on US 63/US8 through town with the design of the Turtle Lake south bypasses.

Proposal 34. Move Deer Lake Southern Realignment farther south to back to property lines with a 170th Street grade-separated crossing.

DATCP also suggested this design in the Deer Lake area in a letter at the time of the VE Study. A Deer Lake Far Southern Realignment Alternative was developed for the study and is described in Section 2.2. Because both the VE team and DATCP suggested this alignment, the alternative was carried forward for detailed analysis.

Proposal 38. Reroute 125th Avenue to 15th Street.

Final access decisions will be made during preliminary and final design. This proposal could affect emergency response times to local properties and may not provide reasonable access to the affected parcels. The length of dead end roadway may exceed that limited by county ordinance. The distance from the dead end to 15th Street is 1.65 miles (2.7 km).

Proposal 39. Improve sections across Joel Flowage, Clover Lake, and Twin Lakes.

Estimated construction costs for alternatives include completely spanning waterways although this is a future design consideration that will have agency input. Causeway removal costs are not calculated since the borrow could be used in other sections of the project and/or for the piers of the structures that will span the waterways.

Proposal 41. On the No-build Alternative, continue Turtle Lake and Barron needs with corridor preservation.

The existing corridors should be preserved and maintained. The course of action will be determined by the final EIS. If the No-build Alternative is selected in these areas for this study, corridor preservation should continue to be a priority.

Proposal 45. Consider utilizing more of the recently built projects east and west of Turtle Lake in the new corridor design.

The intention is to utilize the previously constructed roadway as half of the proposed facility as much as possible by staying on alignment. The scope of the study and level of detail of available base information does not allow for the detailed design of the proposed roadways. Exact alignment and profiles can not be duplicated because of the limits of the data. Detailed survey and design at later stages will allow for the incorporation of the existing roadbeds. The proposed roadways will be reviewed to ensure incorporation of previously constructed projects. The previously constructed projects must meet the design standards used for the proposed US 8 corridor or obtain design exceptions to standards.

Proposal 46. Eliminate the Barron North Bypass grade separation at the rail crossing at the east end of the segment.

This crossing will be reevaluated during preliminary design of the proposed alternative. One train per day, four days a week, from the Wisconsin Central Limited rail line pass through this crossing. According to WisDOT's FDM, grade-separated structures for railroads should be considered when the exposure factor[2] exceeds 75,000. The exposure factor for the North Bypass would be less than 10,000. Therefore, a grade-separated structure is not required. The cost of the structure will be removed from the cost estimate. The Barron North Bypass alternative will indicate an at-grade crossing with the railroad.

[2] *WisDOT FDM,* Procedure 17-1-1, Exposure Factor = roadway ADT * average trains per day (generally over a 30-day period).